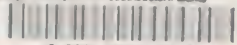


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Energy development in southernmost Montana



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ENERGY DEVELOPMENT IN SOUTHEASTERN MONTANA:

ITS IMPACT ON OUTDOOR RECREATION

Submitted to:

The Montana Department of Fish, Wildlife & Parks

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By:

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Practicum Student
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Missoula
May 1981

Edited by:

The Montana Department of Fish, Wildlife & Parks
October 1981



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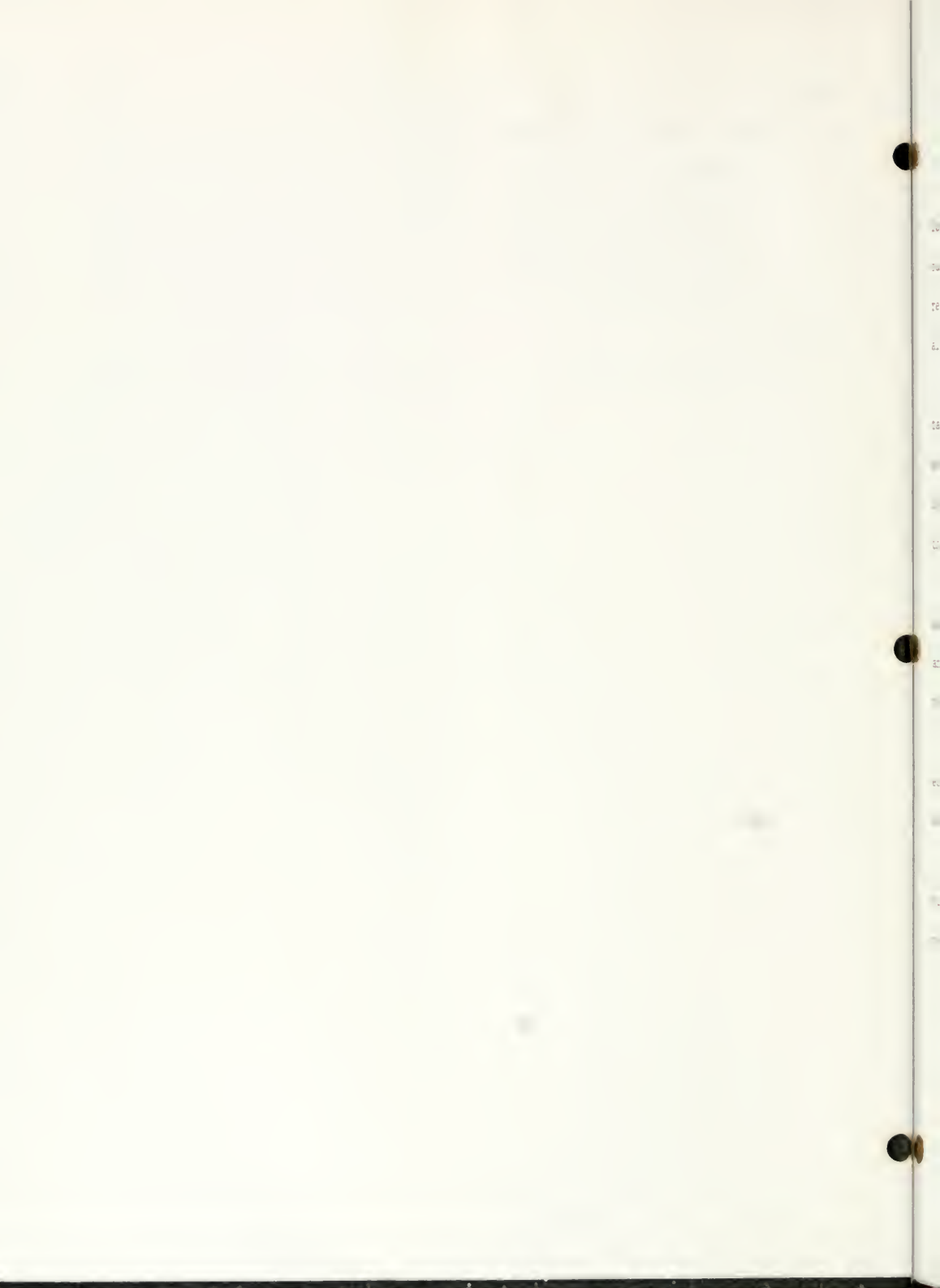
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Chapter I

Introduction & Objectives

Southeastern Montana is underlain with large deposits of coal and other fossil fuels. Three types of coal can be found in Montana: bituminous coal, subbituminous coal, and lignite coal. Most of the United States' subbituminous and lignite reserves are found in the western states, while 85% of the bituminous and almost all of the anthracite reserves are east of the Mississippi.

The Powder River Basin of Northeastern Wyoming and Southeastern Montana, contains some of the thickest accumulations of lignite and subbituminous coal resources found in the world. Another major region of coal in southeastern Montana is the Fort Union coal deposit. Fort Union coal represents approximately 11% of the western coal reserves and is primarily lignite.

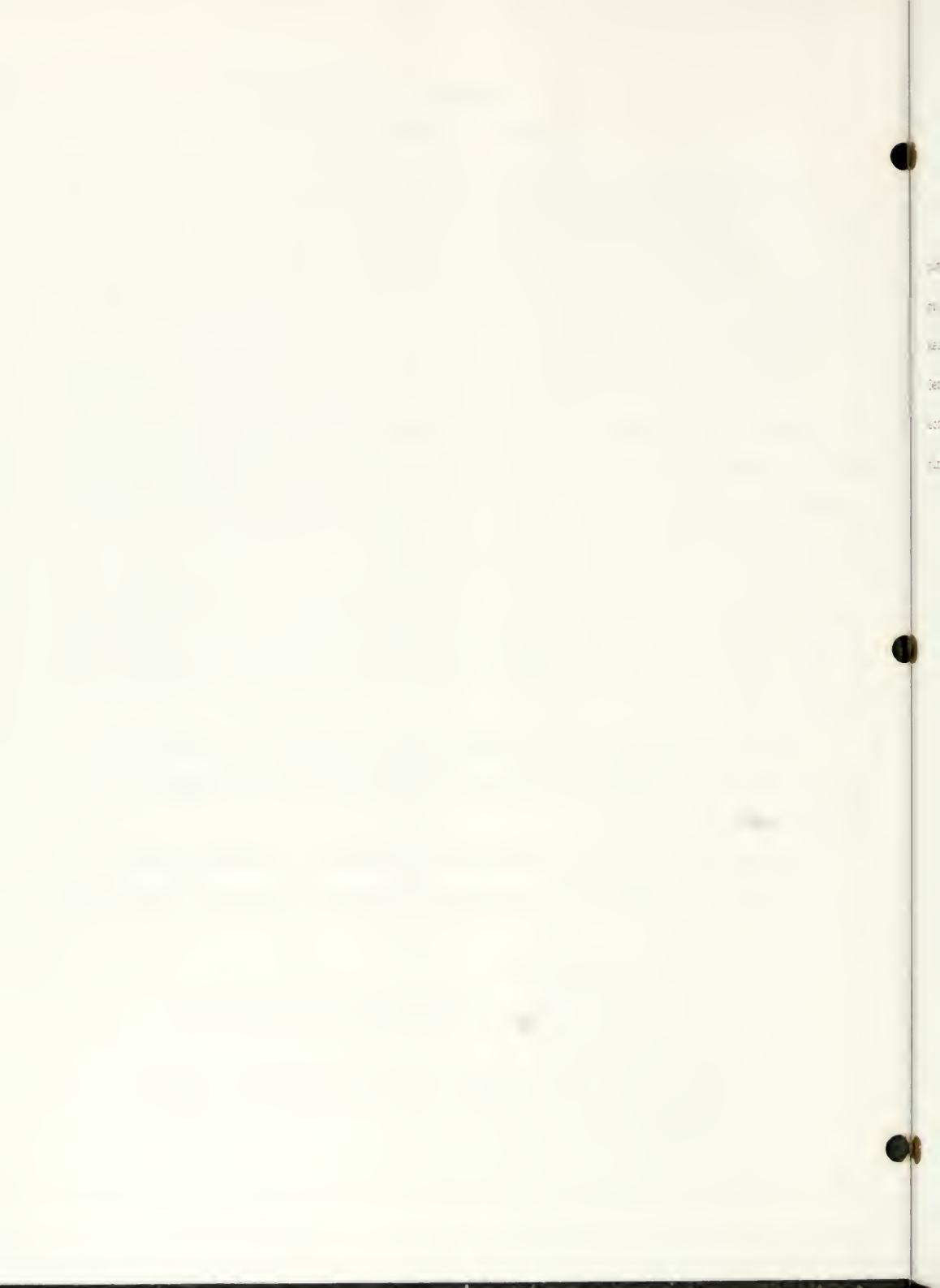
Lignite has high moisture content, is low in sulphur and is relatively low in heating value. Because of these properties, lignite is uneconomical to transport and better suited for energy conversion facilities such as gasification plants near the mine site.

Coal mining operations have already attracted thousands of new residents to eastern Montana and many more may follow if mining operations are expanded or conversion facilities built.

These new residents will be looking for recreational opportunities, and a sudden population increase may leave present recreation facilities in short supply on a per capita basis.

The purpose of this study was to:

- a. collect energy development and population projections for southeastern Montana.
- b. determine the present supply of outdoor recreation facilities in southeastern Montana.

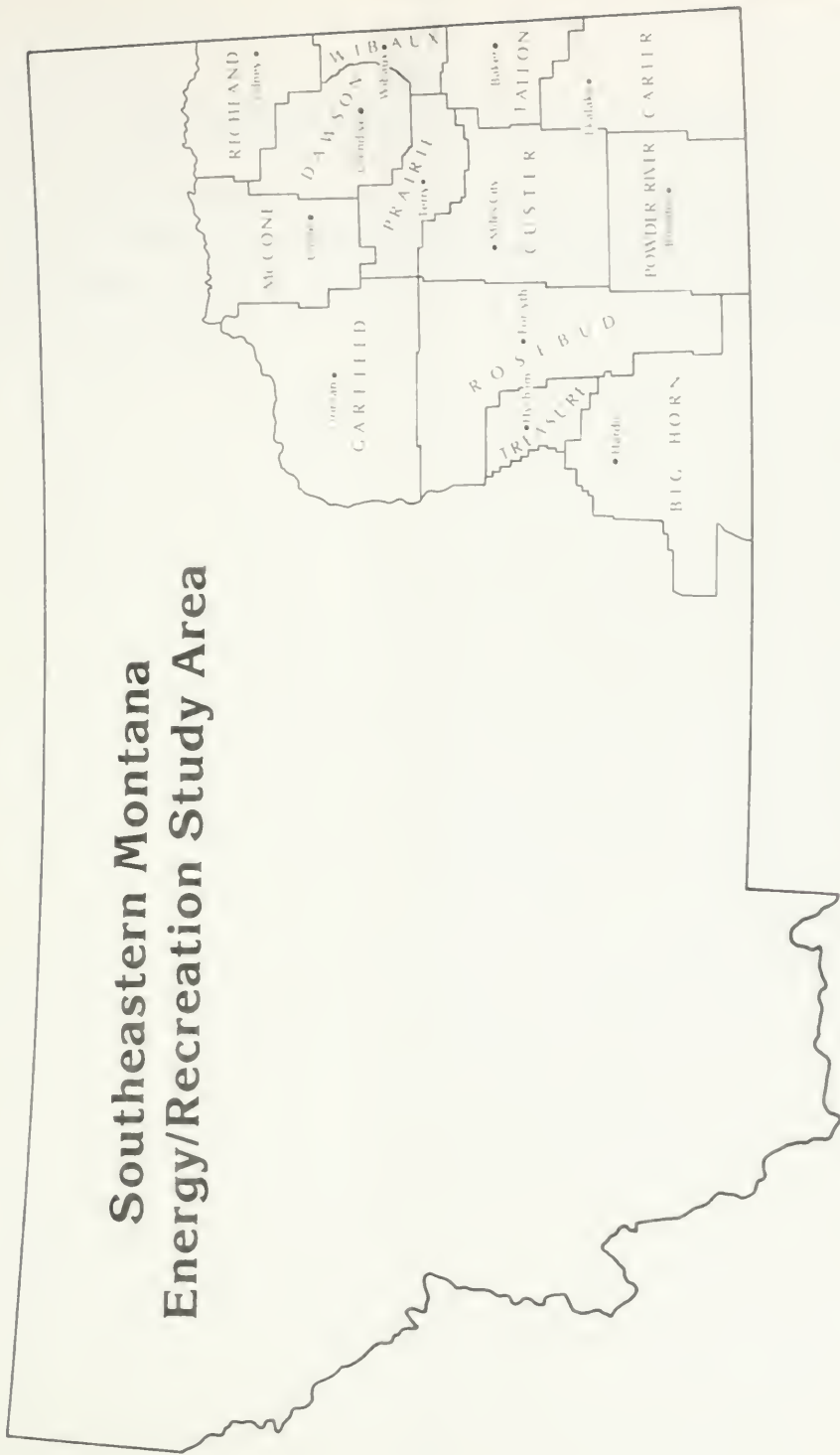


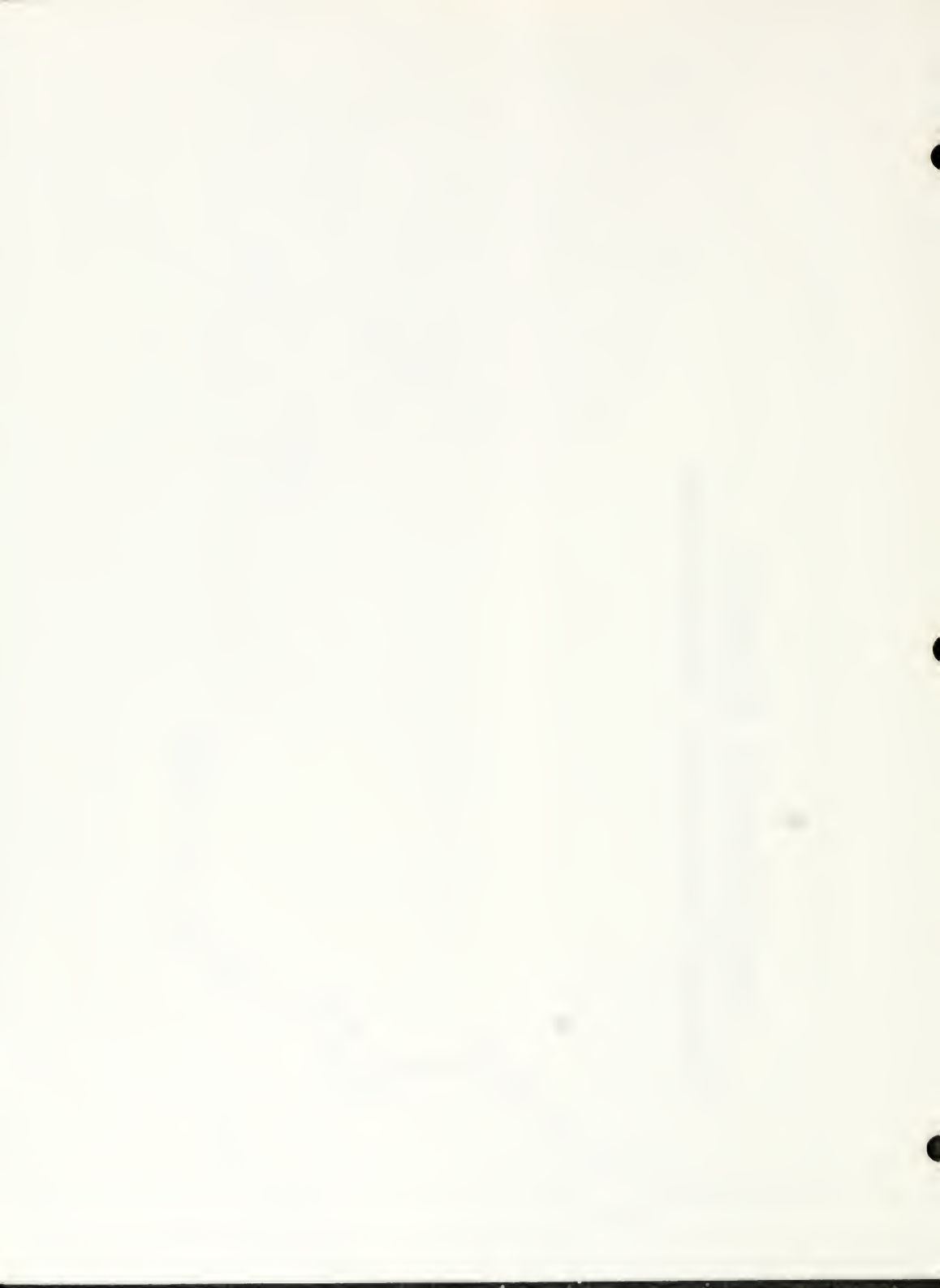
- c. survey present residents of this region to determine their recreational preferences.
- d. project the demand for recreation facilities in 1990 for southeastern Montana.

A thirteen county study area was defined as shown on the map. The study was conducted from April to the end of May, 1981, by John Wachsmuth, as a practicum project in fulfillment of the requirements for his baccalaureate degree in Recreation Management at the University of Montana in Missoula. The Montana Department of Fish, Wildlife and Parks assisted with John's expenses in the project because of the value of the resulting information to outdoor recreation planning in eastern Montana.



Southeastern Montana Energy/Recreation Study Area





Chapter II

Existing Energy Resources and Facilities of Montana

The following map depicts existing energy resources and facilities in Montana. It is taken from the 1980 Montana Energy Almanac, courtesy of the Montana Department of Natural Resources and Conservation, Energy Division and Facility Siting Division.





FIGURE II-A ENERGY RESOURCES AND FACILITIES OF MONTANA



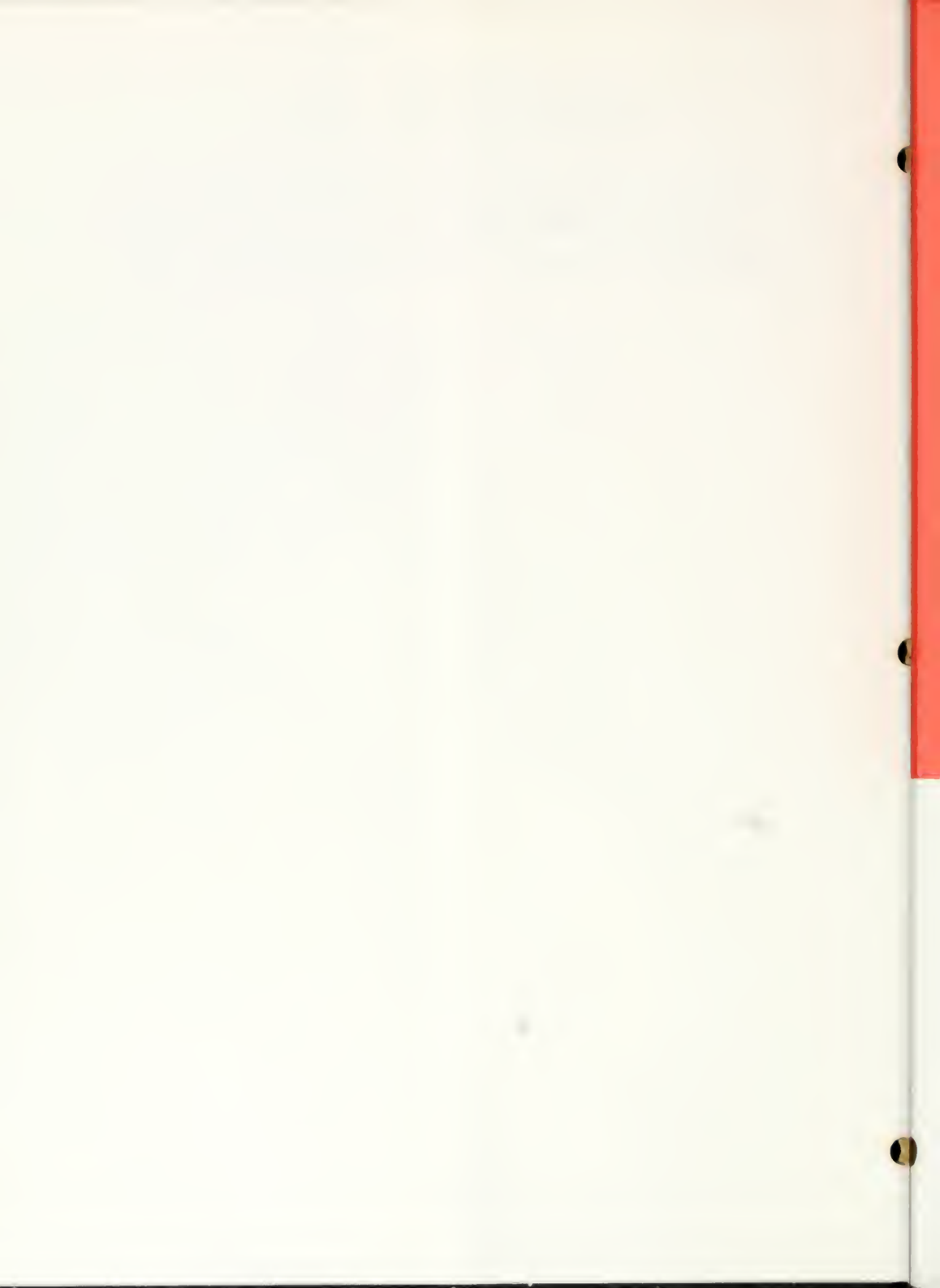


Chapter III

Proposed Energy Development in Montana

The following map depicts proposed energy development in Montana. It is taken from the 1980 Montana Energy Almanac, courtesy of the Montana Department of Natural Resources and Conservation, Energy Division and Facility Siting Division.



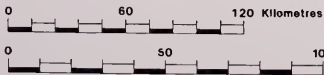


PROPOSED ENERGY DEVELOPMENT IN MONTANA



1 Kerr Dam Refit (Montana Power)	9 Kootenai Falls Dam (Northern Lights)	21 Hungry Horse Rereg (WPRS)
2 Buffalo Rapids (Montana Power)	10 Circle West Synfuel Plant (Northern Resources)	22 Fort Benton (WPRS)
3 Thompson Falls Refit (Montana Power)	11 Fertilizer Plant (Farmers Potash Co.)	23 Fort Peck Rereg (Army Corps)
4 Hauser Dam Refit (Montana Power)	12 Intake Synfuel Plant (Tenneco)	
5 Ryan Dam Refit (Montana Power)	13 Redwater Synfuel Plant (Washington Energy)	
6 Carter Dam (Montana Power)	14 Synfuel Plant (Utah International)	
7a Chester	15 Synfuel Plant (Northern Resources)	
7b Great Falls	16 Coal Strip Mine (Montco)	
7c Great Falls	17 Coal Fired Power Plant (Crow Indian Tribe)	
7d Hardin	18 Synfuels Plant (Crow Indian Tribe)	
8 Two Coal Fired Electric Power Plants (Basin Electric)	19 Coal Strip Mine (Northern Resources)	
	20 Libby Rereg (Army Corps)	

<p>Potential locations of two coal-fired electric power plants for Resource 99 (Montana Power)</p> <p> <input type="checkbox"/> Synfuel <input type="checkbox"/> Thermoelectric <input type="checkbox"/> Hydroelectric <input type="checkbox"/> Fertilizer <input type="checkbox"/> Strip Mine </p>	<p> <input type="checkbox"/> Refit - Installation of additional generators <input type="checkbox"/> Rereg - Peaking power facility </p>
---	--





Chapter IV

Southeastern Montana Population Trend

Using population statistics from the 1970 and 1980 census and projections supplied by the Montana Department of Administration, Division of Research and Information, a steady increase in population is foreseen between 1970 and 1990 for the thirteen county southeastern Montana study area. The ten year period between 1970 and 1980 saw an 11.4% increase while the ten year period from 1980 to 1990 is expected to see an additional increase.

Three counties can be attributed to the majority of the population growth, Richland, Bighorn and Rosebud from 1970 to 1980. Several other counties actually lost population. It is important to note that these "big three" are also most extensively involved in energy development...a thermo electric power plant near Sidney in Richland County, and widespread mining operations around Hardin and Colstrip in Bighorn and Rosebud Counties respectively. (See Chart) Rosebud County, with its burgeoning Colstrip community witnessed a population increase of 64.1% between 1970 and 1980.

Additional extensive energy development in southeastern Montana will certainly result in significant population growth resulting in an increased demand for outdoor recreation facilities.

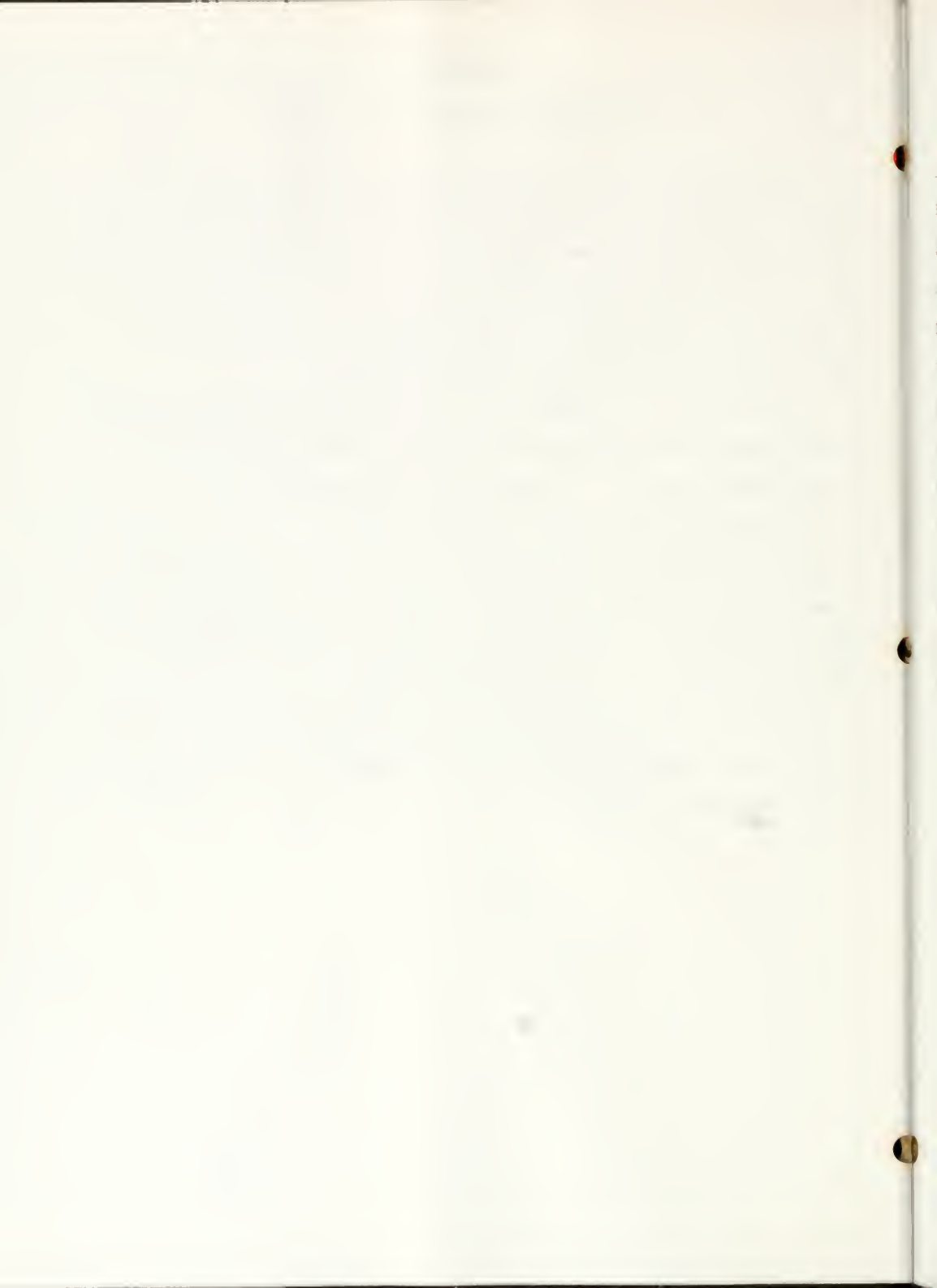


Chart: Southeastern Montana County
Population Trends

	1970 ¹	1980 ¹	% change from 1970	1990 ²	% change from 1980
Big Horn	10,057	11,096	10.3	13,400	20.8
Carter	1,956	1,799	- 8.0	1,700	- 5.5
Custer	12,174	13,109	7.7	13,700	4.5
Dawson	11,269	11,805	4.8	11,900	0.8
Fallon	4,050	3,763	- 7.1	3,800	1.0
Garfield	1,796	1,656	- 7.8	1,600	- 3.4
McCone	2,875	2,702	- 6.0	2,500	- 7.5
Powder River	2,862	2,520	-11.9	2,600	3.2
Prairie	1,752	1,836	4.8	1,700	- 7.4
Richland	9,837	12,243	24.9	13,300	8.6
Rosebud	6,032	9,899	64.1	12,700	28.3
Treasure	1,069	981	- 8.2	900	- 8.3
Wibaux	1,465	1,476	0.8	1,500	1.6
	67,194	74,885	11.4	81,300	8.6

¹1980 Census of Population & Housing, U.S. Dept. of Commerce, Bureau of the Census, Feb. 1981.

²Montana Population Projections 1975-2000, August 1977 (Revised 9/30/80) Montana Department of Administration, Division of Research and Information.



Chapter V

Outdoor Recreation Facility Inventory

Before one can make an educated estimate of what additional outdoor recreation facilities will be needed in the future, some knowledge must be gained as to what facilities exist at present. Following is a compilation of federal, state, local and privately owned outdoor recreation facilities by county within the study area. This information was collected from Volume 2 of the 1978 Montana Statewide Comprehensive Outdoor Recreation Plan, (SCORP), the 1979 Statewide Survey of Urban Recreation Facilities, and by personal contact with local officials. The former two sources were both produced by the Montana Department of Fish, Wildlife and Parks.

Abbreviations used in the compilation are as follows:

Activities

B - boating
BA - boat access
BD - boat dock
BH - bath house
C - camping
F - fishing
FT - float trips
H - hiking
I - information or interpretive exhibits
P - Picnicking
S - swimming area
SB - snowmobiling
TC - trailer/camper hookups
W - waste disposal station
WS - water skiing

Ownership

ACE - Army Corps of Engineers
BIA - Bureau of Indian Affairs
DFWP - Department of Fish,
Wildlife and Parks
FS - Forest Service
HD - Highway Department
NPS - National Park Service

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Big Horn County

<u>Facility</u>	<u>Ownership</u>	<u>Activities</u>
<u>Federal Ownership</u>		
After Bay	NPS	P, C, F, BA
Black Canyon	NPS	P, C, F, BA
Custer Battlefield Nat'l Mon.	NPS	I
LaFever's Ranch	BIA - N. Cheyenne	F
Red Nose	BIA - N. Cheyenne	F
Willow Creek	BIA - Crow	P, F, B
<u>State Ownership</u>		
Arapooish F.A.S.	DFWP	F
Big Horn F.A.S.	DFWP	F
Chief Plenty Coups State Mon.	DFWP	P, F, I
Two Leggins F.A.S.	DFWP	F
Tongue River Reservoir	DNRC	F, BA, BD
Highway Rest Area	HD	P, I
Rosebud Battlefield S.R.A.	DFWP	BA, C, P
<u>Local Government Ownership</u>		
Picnic Areas/1	Lodge Grass	
Tennis Courts/3	Hardin	
Basketball Courts/1	Hardin	
Playgrounds/2	Hardin	
Outdoor Pools/1	Hardin	
Horseshoe Sites/1	Hardin	
Pavilions/1	Hardin	
<u>Private</u>		
	<u>Ownership</u>	
Hardin KOA	KOA	C, TC, W, BH, S
Little Big Horn Camp	Private	C, TC, W, BH, F
4-H Roadside Park	Private	-----

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Carter County

<u>Facilities</u>	<u>Ownership</u>	<u>Activities</u>
<u>Federal Ownership</u>		
Ekalaka Park	FS-Custer	P, C
Lantis Spring	FS-Custer	P, C
Macnab Pond	FS-Custer	C, F
Wickham Gulch	FS-Custer	P
<u>State Ownership</u>		
Medicine Rocks State Park	DFWP	P, C
<u>Local Government Ownership</u>		
Multipurpose Courts/1	Ekalaka	
Outdoor Pools/1	Ekalaka	
Picnic Areas/4	Ekalaka	
Horseshoe Site/3	Ekalaka/County	
Other Courts/1	County	
Pavilions/1	County	
Camping/1	County	
<u>Private Ownership</u>		
None		

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Custer County

Facility	Ownership	Activities
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Federal Ownership

None

State Ownership

Branum Lake F.A.S.	DFWP	P, F
Roche Jaune F.A.S.	DFWP	F, BA, FT
Locate Rest Area	HD	P, I, W
Twelve Mile Dam	DFWP	P, C

Local Government Ownership

Woodruff Park	Custer County	P, C
Spotted Eagle Park	Custer County	P, C, S, FT, SB
Tennis Courts/11	Miles City/College	
Basketball Courts/4	Miles City/College	
Volleyball Court/1	Miles City	
Playground/5	Miles City	
Outdoor Pool/1	Miles City	
Outdoor Ice Rink/1	Miles City	
Horseshoe Site/4	Miles City	
Pistol Range/1	Miles City	
Picnic Area/2	Miles City	
Archery Range/1	Miles City/County	

Private Ownership

Rifle Range/1	Rod & Gun Club	
Shot Gun Range/1	Trap Club	
Golf Course/1	Private	
Camping Area/1	KOA	

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Dawson County

<u>Facility</u>	<u>Ownership</u>	<u>Activities</u>
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Federal Ownership

None

State Ownership

Hollecker Pond F.A.S.	Dawson County	F
Intake Dam F.A.S.	DFWP	P, I, F, BA, FT
Johnson Reservoir F.A.S.	DFWP	F
Makoshika State Park	DFWP	P, I, H
Highway Rest Area	HD	I
Highway Rest Area	HD	I
Richey Rest Area	HD	I

Local Government Ownership

Outdoor Ice Rink/4	Dawson County
Shooting Ranges/2	Dawson County
Pistol Range/1	Dawson County
Archery Range/1	Dawson County
Golf Course/1	Dawson County
Pavilions/1	Dawson County
Multipurpose Courts/1	Glendive
Tennis Courts/4	Glendive/County
Basketball Courts/4	Glendive
Ballfields/10	Glendive/County
Playgrounds/15	Glendive/County
Outdoor Pools/2	Glendive/County
Horseshoe Sites/4	Glendive/County

Private Ownership

Camping/4	Private
Glendive KOA	KOA
Green Valley Campground	Private
I-94 Campground	Private
Spring Grove Trailer Park	Private

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Fallon County

<u>Facility</u>	<u>Ownership</u>	<u>Activities</u>
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Federal Ownership

None

State Ownership

Rush Hall Reservoir F.A.S.

DFWP

F

South Sandstone S.R.A.

DFWP

P, F, B, S, BA

Local Government Ownership

None

Private Ownership

None

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Garfield County

<u>Facility</u>	<u>Ownership</u>	<u>Activities</u>
<u>Federal Ownership</u>		
Devils Creek	ACE	P, S, F, B
<u>State Ownership</u>		
Hell Creek S.R.A.	DFWP	P, C, S, F, B
Purgatory Hill State Monument	DFWP	-----
Rock Creek S.R.A.	DFWP	P, C, F, B, BA, WS
Highway Rest Area	HD	P, I
<u>Local Government Ownership</u>		
Outdoor Pool/1	Jordan	
Outdoor Ice Rink/1	Jordan	
<u>Private Ownership</u>		
Kamp Katie	Private	C, TC, BH

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McCone County

<u>Facility</u>	<u>Ownership</u>	<u>Activities</u>
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Federal Ownership

Bear Creek	ACE	C, S, F, B, WS
------------	-----	----------------

State Ownership

None

Local Government Ownership

Tennis Courts/2	Circle	
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Basketball Courts/1	Circle	
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Ballfields/4	Circle	
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Playground/1	Circle	
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Outdoor Pool/1	Circle	
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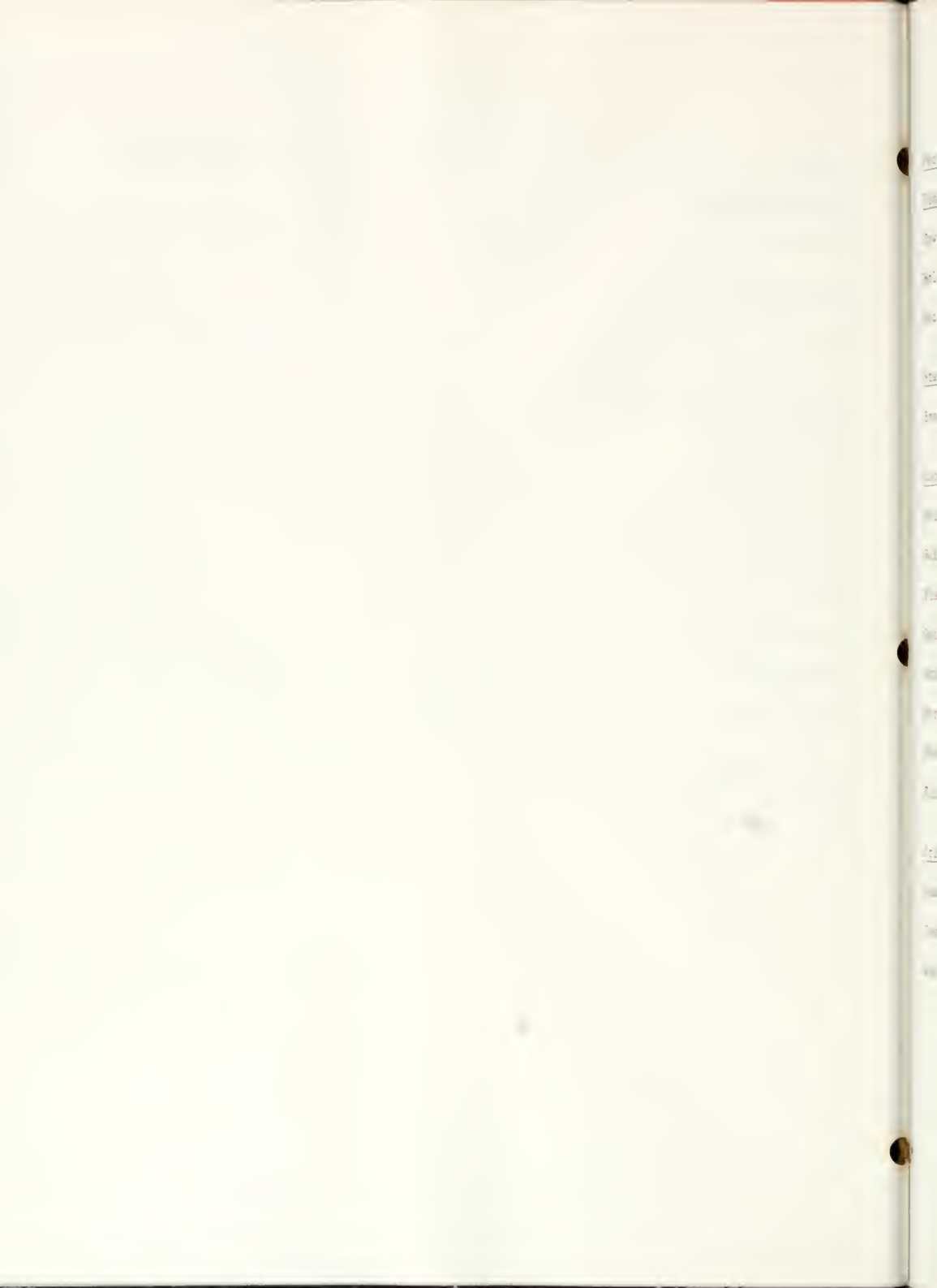
Horseshoe Site/2	Circle	
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Camping Area/1	Circle	
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Picnic Area/3	Circle	
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Private Ownership

None



Powder River County

<u>Facility</u>	<u>Ownership</u>	<u>Activities</u>
<u>Federal Ownership</u>		
Cow Creek	FS-Custer	P, C, F
Holiday Spring	FS-Custer	P
Red Shale	FS-Custer	P, C, H
<u>State Ownership</u>		
Broadus Rest Area	HD	I
<u>Local Government Ownership</u>		
Multipurpose Courts/2	Broadus/County	
Ball Fields/2	Broadus/County	
Playground/1	Broadus	
Outdoor Pools/2	Broadus/County	
Outdoor Ice Rink/1	Broadus	
Horseshoe Site/1	Broadus	
Shooting Range/1	Broadus	
Picnic Areas/1	Broadus	
<u>Private Ownership</u>		
Lemonade Spring	Private	C, TC, W, DS, CC
Town & Country Village	Private	C, TC, W
Wayside Park	Private	C, TE, W

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Prairie County

<u>Facility</u>	<u>Ownership</u>	<u>Activities</u>
-----------------	------------------	-------------------

Federal Ownership

None

State Ownership

Fallon Bridge F.A.S.	DFWP	F
Powder River Depot State Monument	DFWP	I, F, BA, FT

Local Government Ownership

Highway 10 Picnic Area	County	
Picnic Areas/1	County	
Pavillions/1	County	
Multipurpose Courts/2	Terry/County	
Tennis Courts/2	Terry	
Ballfields/1	Terry	
Playgrounds/1	Terry	
Outdoor Pool/1	Terry	
Outdoor Ice Rink/1	Terry	
Horseshoe Site/1	Terry	

Private Ownership

None

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Richland County

Facility	Ownership	Activities
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Federal Ownership

None

State Ownership

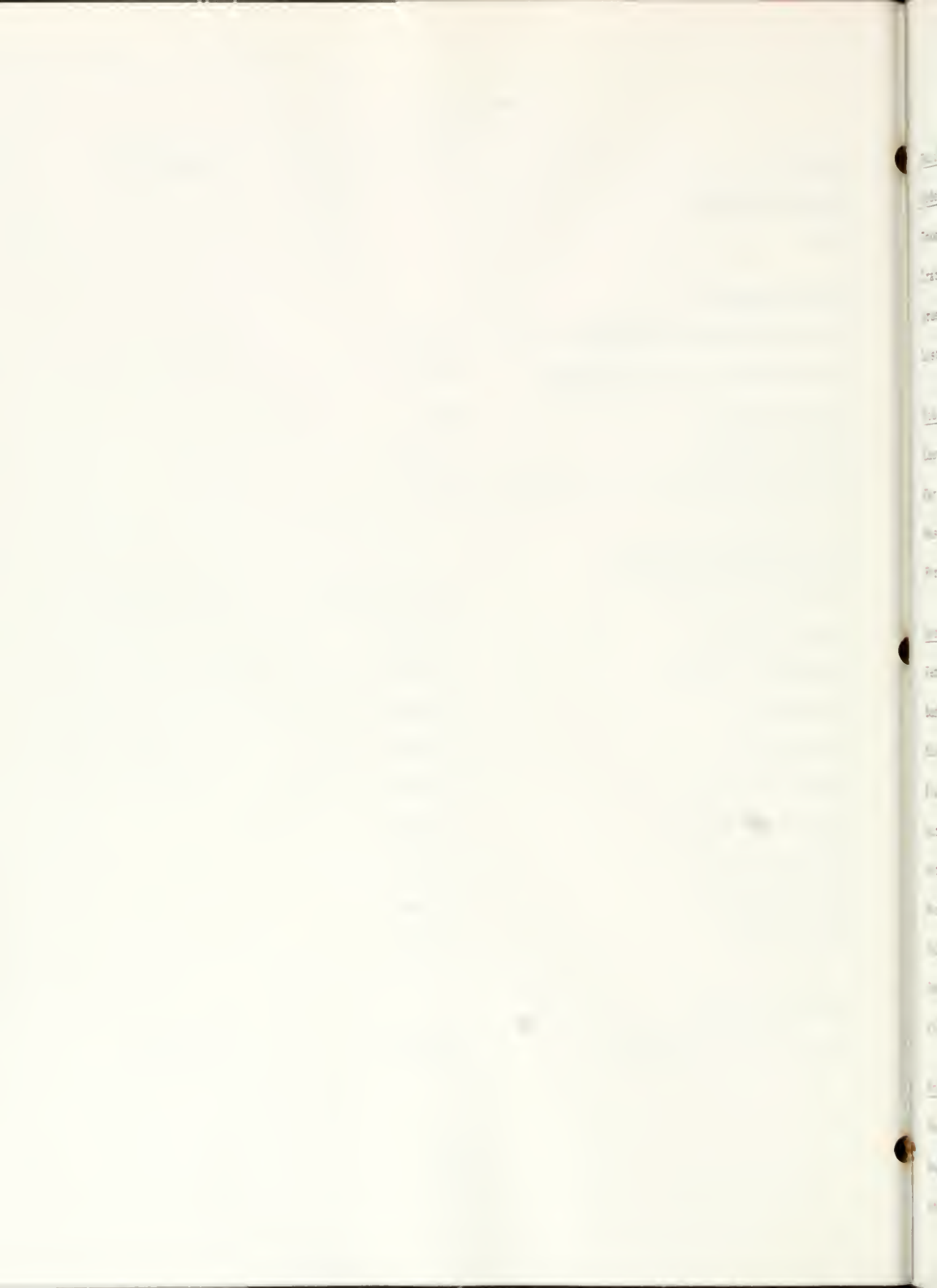
Elk Island Wildlife Management Area	DFWP	F
Fox Lake Wildlife Management Area	DFWP	F
Gartside Reservoir F.A.S.	DFWP	F
Kuester Reservoir	Private	F
Seven Sisters Wildlife Management Area	DFWP	F

Local Government Ownership

Richland County Park	Richland County	C, S, F, FT
Tennis Courts/2	Sidney	
Basketball Courts/2	Sidney	
Ballfields/5	Sidney	
Playgrounds/5	Sidney	
Outdoor Pools/1	Sidney	
Outdoor Ice Rinks/3	Sidney	
Horseshoe Sites/1	Sidney	
Camping Areas/1	Sidney	
Picnic Areas/2	Sidney	

Private Ownership

Friday's Mobile Home Park	Private	C, TC, W
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Rosebud County

<u>Facility</u>	<u>Ownership</u>	<u>Activities</u>
<u>Federal Ownership</u>		
Poker Jim Butte	FS-Custer	P
Crazy Head Springs	BIA-N. Cheyenne	P, C, S, F
Green Leaf	BIA-N. Cheyenne	F
Lost Leg	BIA-N. Cheyenne	F
<u>State Ownership</u>		
East Rosebud S.R.A.	DFWP	P, F, FT
Far West S.R.A.	DFWP	F, FT
West Rosebud S.R.A.	DFWP	C, F, FT, BA
Forsyth Rest Area	HD	P, I, W
<u>Local Government Ownership</u>		
Tennis Courts/9	Colstrip/Forsyth	
Basketball Courts/3	Colstrip	
Ballfields/8	Forsyth/Colstrip	
Playgrounds/12	Forsyth/Colstrip	
Outdoor Pools/2	Forsyth/Colstrip	
Outdoor Ice Rink/3	Forsyth	
Horseshoe Site/1	Forsyth	
Golf Course/1	Forsyth	
Pavilions/1	Forsyth	
Picnic Areas/3	Forsyth	
<u>Private Ownership</u>		
Shooting Range/1	Colstrip Rod & Gun Club	
Wagon Wheel	Private	TC, W, F
Other Courts/2	Bechtel Power	

Treasure County

<u>Facility</u>	<u>Ownership</u>	<u>Activity</u>
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Federal Ownership

None

State Ownership

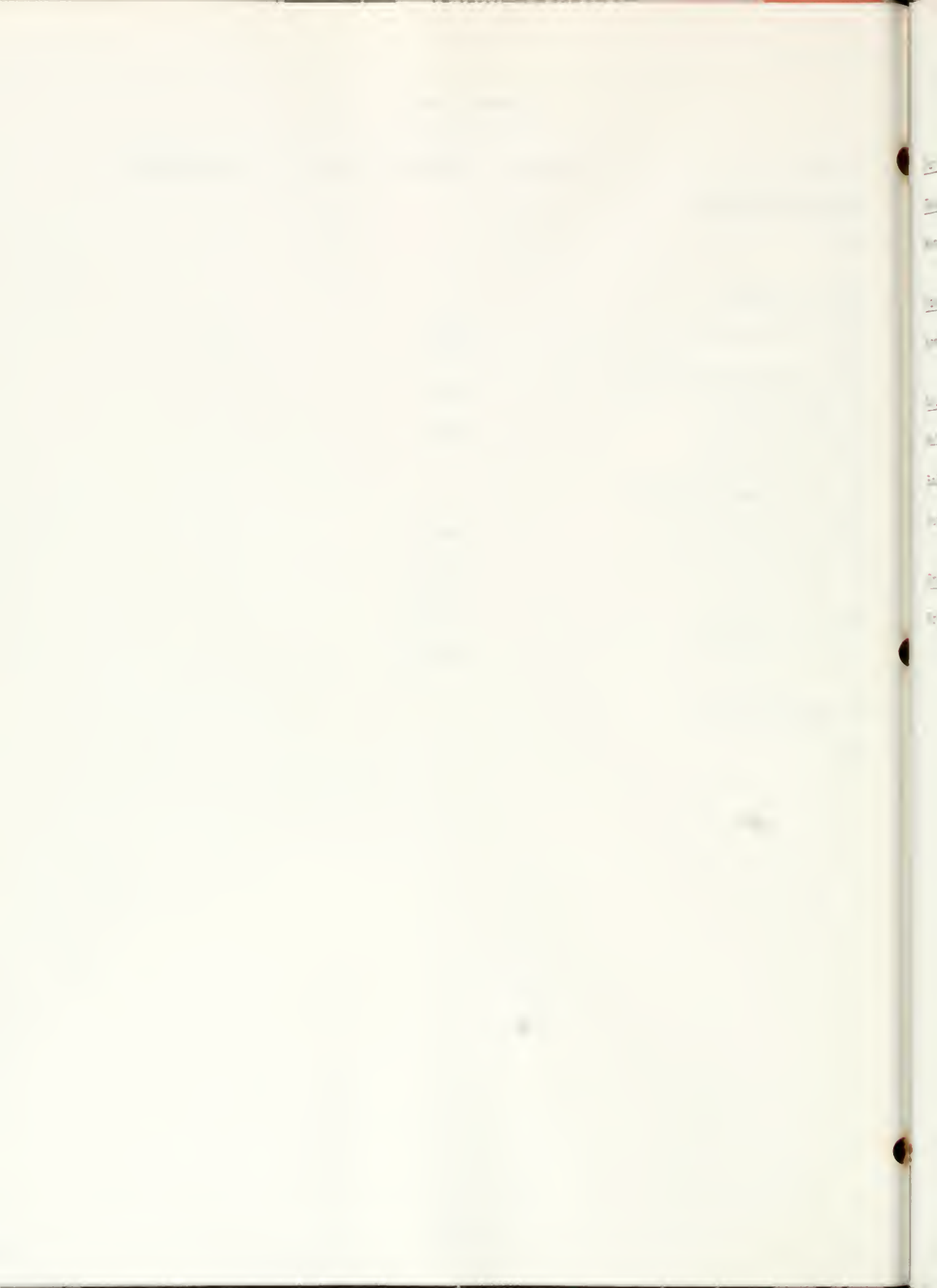
Amelia Island F.A.S.	DFWP	F
Isaac Homestead Wildlife Management Area	DFWP	---
Hysham Rest Area	DFWP	P

Local Government Ownership

Tennis Courts/1	Hysham	
Ballfields/1	Hysham	
Outdoor Pools/1	Hysham	
Outdoor Ice Rink/1	Hysham	

Private Ownership

None



Wibaux County

<u>Facility</u>	<u>Ownership</u>	<u>Activities</u>
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Federal Ownership

None

State Ownership

None

Local Government Ownership

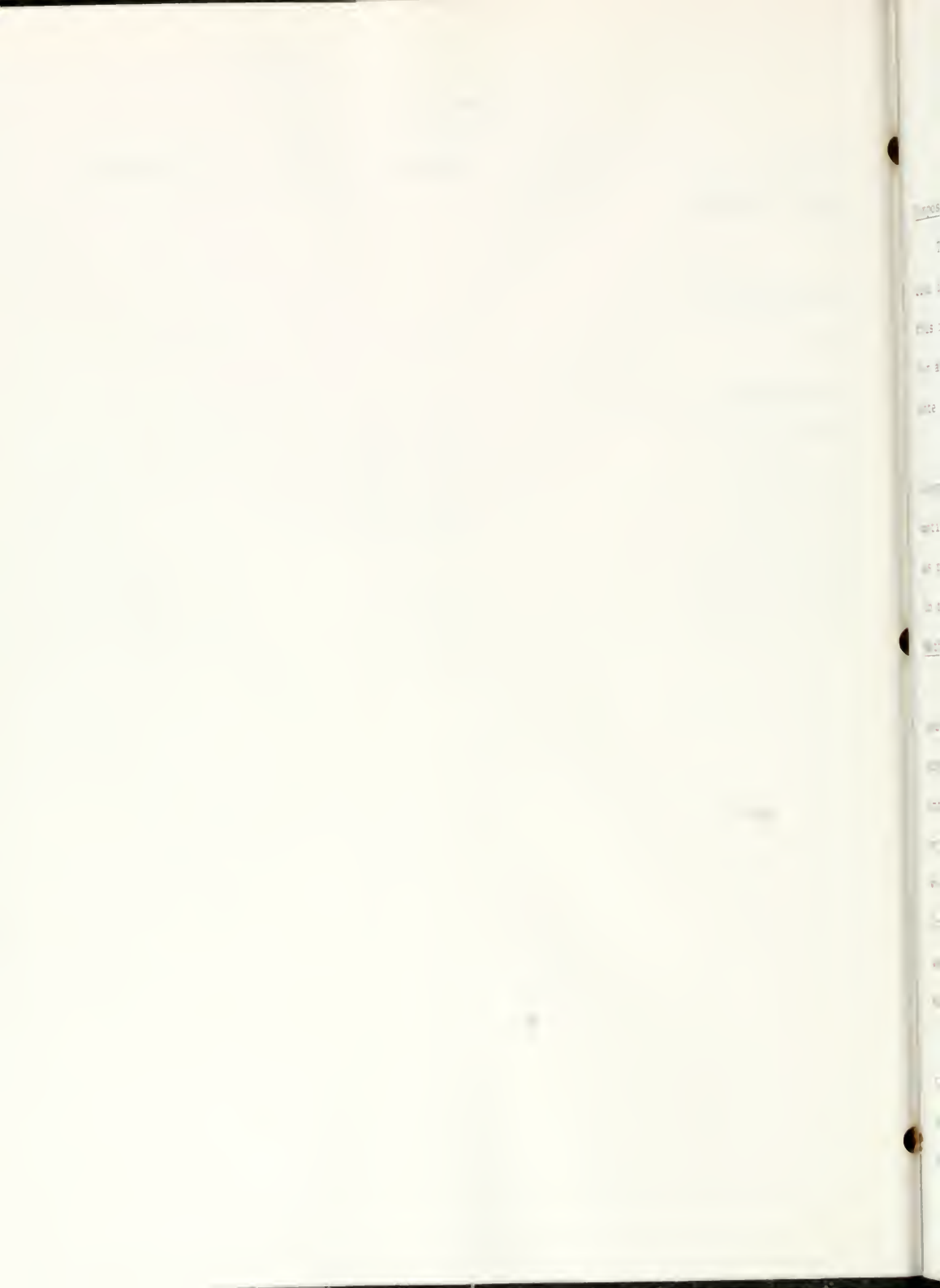
Multipurpose Courts/1	Town of Wibaux	
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Ballfields/1	Town of Wibaux	
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Outdoor Pool/1	Town of Wibaux	
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Private Ownership

Fred's Camper Court	Private	TC, C, W
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Chapter VI

Outdoor Recreation Participation Survey (See Sample Survey)

Purpose

The survey was designed primarily to determine the degree of participation in certain specified outdoor recreation activities. In conjunction with this information the respondents were asked if additional facilities were needed for any activities and if there were activities which they would like to participate in, but were unable to.

In addition certain categorizing information was requested such as age, length of residence in their respective county, and occupation. With this information it was hoped to detect potential changing outdoor recreation preferences as new and possibly younger residents moved into southeastern Montana to work in the coal industry.

Methodology

Three survey sites were selected within the study area - Miles City, Forsyth and Circle. It was hoped that these three communities would provide recreation preference information from three categories of residents. Miles City is developing into a service center for southeastern Montana with a large number of business oriented residents. Forsyth has received an influx of coal industry employees who may be relatively young and new to the region. Circle has been more removed from energy development with fewer job opportunities for young people. Circle was expected to represent the established long time residents of southeastern Montana.

Because the entire survey was to be conducted and analyzed by only one practicum student, a modest sample size of 100 was the objective at each site. This objective was approached with an actual sample size of 89, 77, and 86 respectively in the above three communities.



FILE

SOUTHEASTERN MONTANA OUTDOOR RECREATION SURVEY

You can help plan for future recreation use by completing this questionnaire. Thank you!

- 1. a) County of Residence _____
- b) How long have you lived in this county? _____
- c) Age _____ Sex M F

2.	a)	b)	c)	d)
Outdoor Recreation Activities	I would participate in these activities about _____ times per year.	I would like to see more facilities for . . . (Give Examples)	To participate, I would travel _____ miles one way.	I participate an average of (hours, days, weeks) per trip.
Fishing (Stream)				
Fishing (Reservoir)				
Hunting (Bird)				
Hunting (Big Game)				
Backpacking (Overnight)				
Hiking (Day)				
Car Camping				
Picnicking				
Bicycling				
Horseback Riding				
Canoeing/Rafting (Standing Water)				
Sailing				
River Floating				
Swimming (Pool)				
Swimming (Natural Water)				
Motor Boating				
Four-Wheel Touring				
Motorbike Riding				
Snowmobiling				
Ice Skating (Natural Ice)				
Ice Skating (Man-Made)				
Cross-Country Skiing				
Downhill Skiing				
Bird Watching				
Baseball/Softball				
Tennis				
Running				
Golf				
Please List Any Others:				

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Survey Results

The responses from each survey sites and a cumulative response are given for each question of the survey on the following pages for comparison and analysis.

Question one was divided into these demographic components. Part la, "County of Residence" was asked to identify any respondent who was not a resident of the survey area being sampled. This situation did not arise.

Part lb, "How long have you lived in this county?", was intended to identify survey areas with primarily long time vs. recently arrived residents. A similar objective was intended with part lc, "Age of respondents." If the survey communities could be shown to be primarily of a given length of residence or age category, changing recreation preferences might be discovered by comparing the "long time" community responses to those of the "recent arrival" community.

Unfortunately such stratification was not very apparent. Forsyth has a slightly higher proportion of recent or 2-5 year residents and an even less significant bulge in 26-35 year old residents. Miles City and Circle do not significantly vary in their stratification.

The sex of the respondent was requested only for statistical tracking.

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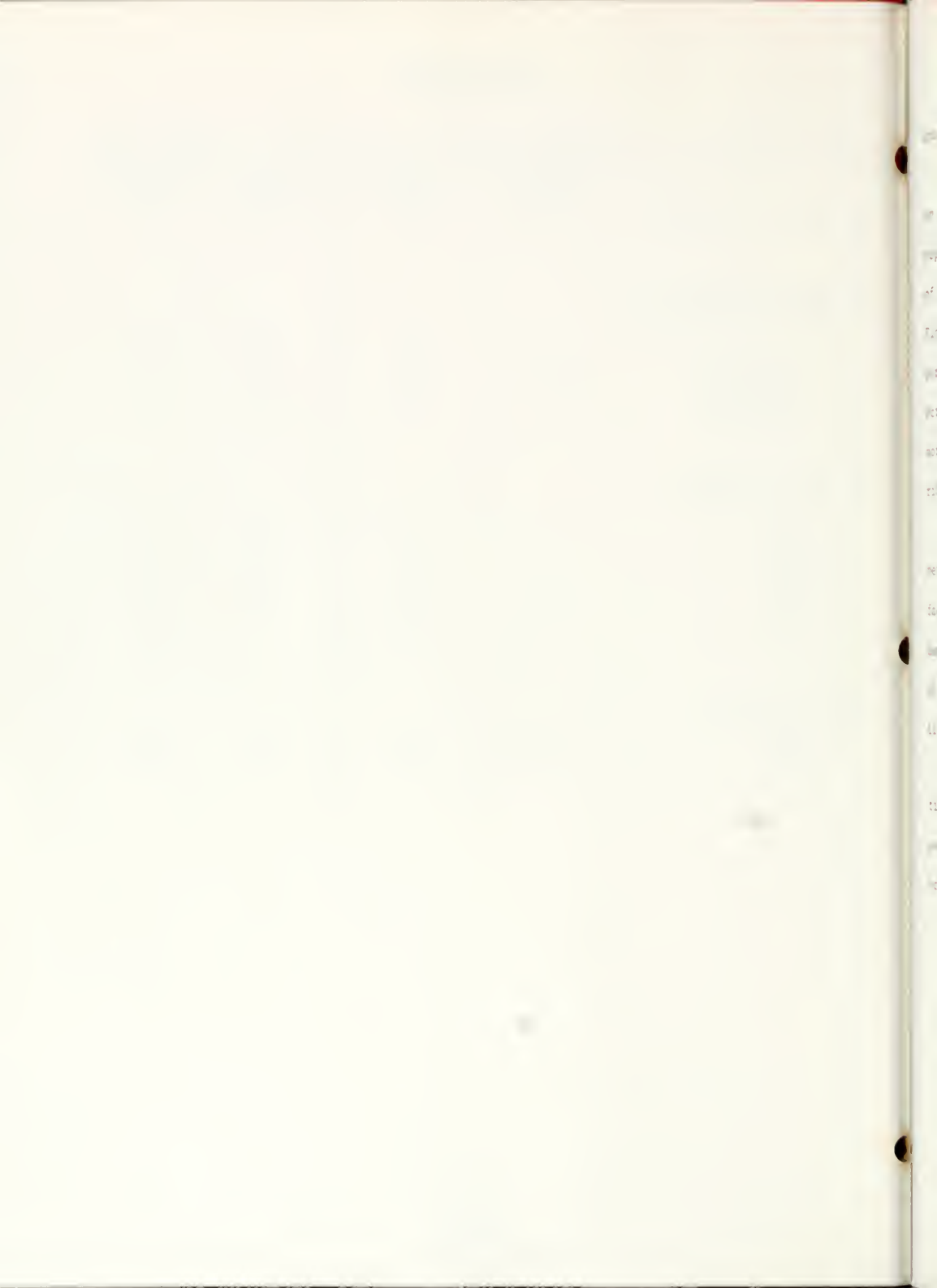
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Survey Results

<u>Survey Question</u>	<u>Miles City</u>	<u>Forsyth</u>	<u>Circle</u>	<u>Cumulative</u>
	Sample Size = 89	Sample Size = 77	Sample Size = 86	Sample Size = 252
1a County of Residence	Custer	Rosebud	McCone	N.A.
1b How long have you lived in this county?				
≤ 1 year	12%	10%	15%	13%
2-5 years	16	26	12	17
6-10 years	11	23	12	15
>10 years	61	41	61	55
1c Age of respondents				
≤ 17	4%	1%	2%	3%
18-25	22	18	26	22
26-35	35	36	33	35
36-45	13	14	19	15
46-55	15	13	8	12
≥ 55	11	18	12	13
Sex of Respondents				
Male	69%	73%	47%	63%
Female	31	27	53	37



Question two was divided into four parts relating to participation in outdoor recreation activities.

Part 2a was really two questions in one, and is represented by two charts on the following pages. The first portion of this question determined the popularity of a variety of outdoor recreation activities. Picnicking, with 70% of the cumulative respondents participating, was the most popular activity. Picnicking was closely followed by fishing, hunting and swimming. The second portion of part 2a asked how many times the individual participated in each activity per year. It is interesting to note that some activities which were not high in popularity were participated in quite frequently i.e. horseback riding and motorbike riding.

Part 2b was intended to identify those activities for which the respondents perceived a need for more facilities. The need for additional swimming pool facilities was by far the predominant need, being cited by 25% of all respondents. Picnicking facilities appeared to be second in need according to 15% of all respondents. Bicycle and fishing facilities followed closely as identified by 14% and 13% of all respondents respectively.

Parts 2c and 2d dealt with miles traveled to participate, and length of time participated per occasion. Both of these questions were included for possible work in the future on energy consumption per occasion, and will not be discussed further in the context of this study.

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Survey Question 2a	Miles City	Forsyth	Circle	Cumulative
I would participate in these activities...	Sample Size = 89	Sample Size = 77	Sample Size = 86	Sample Size = 252
Percent of Respondents Participating				
Fishing (Stream)	83%	74%	50%	69%
Fishing (Reservoir)	63	62	81	69
Hunting (Bird)	48	47	42	46
Hunting (Big Game)	55	55	48	52
Backpacking (Overnight)	34	25	22	27
Hiking (Day)	42	35	25	34
Car Camping	26	39	35	33
Picnicking	80	66	64	70
Bicycling	44	47	37	42
Horseback Riding	27	19	29	25
Canoe/Rafting (Lake)	27	25	20	24
Sailing	8	0	5	4
River Floating	58	49	17	42
Swimming (Pool)	54	49	51	52
Swimming (Natural Water)	44	43	45	44
Motor Boating	39	26	51	39
Four-Wheel Touring	26	21	20	22
Motorbike Riding	28	22	21	24
Snowmobiling	26	18	45	30
Ice Skating (Natural Ice)	24	14	31	23
Ice Skating (Man-Made)	23	14	17	20
Cross-Country Skiing	31	10	15	19
Downhill Skiing	22	19	6	16
Bird Watching	13	1	7	8
Baseball/Softball	33	23	45	36
Tennis	27	34	28	29
Running	27	18	21	22
Golf	31	29	14	25
Other	0	0	0	0

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Survey Question 2a	Miles City	Forsyth	Circle	Cumulative
I would participate in these activities about ? times per year.	Sample Size = 89	Sample Size = 77	Sample Size = 86	Sample Size = 252
	Average Times Participated By Participants on Previous Chart			
Fishing (Stream)	12	11	8	11
Fishing (Reservoir)	11	8	8	9
Hunting (Bird)	7	10	9	9
Hunting (Big Game)	5	5	8	6
Backpacking (Overnight)	7	7	6	7
Hiking (Day)	14	12	7	12
Car Camping	7	8	5	7
Picnicking	9	12	8	9
Bicycling	41	32	22	32
Horseback Riding	29	26	32	29
Canoe/Rafting (lake)	11	9	8	10
Sailing	4	0	3	4
River Floating	9	9	6	9
Swimming (Pool)	24	21	15	20
Swimming (Natural Water)	22	18	14	18
Motor Boating	19	8	7	11
Four-Wheel Touring	20	18	10	16
Motorbike Riding	37	35	34	36
Snowmobiling	12	9	14	12
Ice Skating (Natural Ice)	12	8	6	9
Ice Skating (Man-Made)	17	5	10	12
Cross Country Skiing	11	8	5	9
Downhill Skiing	7	8	2	7
Bird Watching	15	365	7	31
Baseball/Softball	22	20	26	23
Tennis	21	11	7	13
Running	62	67	42	57
Golf	26	31	9	24
Other	0	0	0	0

Survey Question 2b	Miles City	Forsyth	Circle	Cumulative
I would like to see more facilities for...	Sample Size = 89	Sample Size = 77	Sample Size = 86	Sample Size = 252
	Percent of Respondents Indicating a Need for Additional Facilities			
Fishing (Stream)	13%	17%	10%	13%
Fishing (Reservoir)	11	18	9	13
Hunting (Bird)	7	5	8	7
Hunting (Big Game)	12	5	7	8
Backpacking (Overnight)	8	0	5	4
Hiking (Day)	4	6	5	5
Car Camping	4	5	7	6
Picnicking	18	8	17	15
Bicycling	22	13	7	14
Horseback Riding	6	1	1	3
Canoe/Rafting (Lake)	7	0	1	3
Sailing	0	0	1	0
River Floating	11	4	1	6
Swimming (Pool)	18	23	30	24
Swimming (Natural Water)	6	1	7	5
Motor Boating	3	3	6	4
Four-Wheel Touring	0	0	1	0
Motorbike Riding	7	10	0	5
Snowmobiling	4	3	3	4
Ice Skating (Natural Ice)	4	4	1	3
Ice Skating (Man-Made)	1	1	1	1
Cross Country Skiing	4	0	1	2
Downhill Skiing	0	3	0	1
Bird Watching	1	0	1	1
Baseball/Softball	1	5	7	4
Tennis	10	5	6	7
Running	6	3	1	3
Golf	2	0	8	4
Other	0	0	0	0



Survey Question 2c	Miles City	Forsyth	Circle	Cumulative
To participate I would travel _____ miles one way	Sample Size = 89	Sample Size = 77	Sample Size = 86	Sample Size = 252
Average Miles Driven by Participants				
Fishing (Stream)	84	96	93	90
Fishing (Reservoir)	58	81	67	68
Hunting (Bird)	42	46	89	58
Hunting (Big Game)	105	145	113	120
Backpacking (Overnight)	102	142	100	113
Hiking (Day)	32	59	52	46
Car Camping	118	111	129	119
Picnicking	14	30	43	28
Bicycling	10	9	30	16
Horseback Riding	13	28	38	26
Canoe/Rafting (Lake)	26	36	46	35
Sailing	61	0	100	75
River Floating	31	60	74	48
Swimming (Pool)	6	11	16	11
Swimming (Natural Water)	14	36	57	36
Motor Boating	75	138	66	45
Four-Wheel Touring	45	56	52	50
Motorbike Riding	37	70	33	45
Snowmobiling	62	46	56	56
Ice Skating (Natural Ice)	6	10	14	10
Ice Skating (Man-Made)	2	9	17	8
Cross Country Skiing	23	58	46	35
Downhill Skiing	169	226	240	199
Bird Watching	6	50	12	10
Baseball/Softball	19	38	46	35
Tennis	2	6	24	11
Running	2	6	32	13
Golf	20	43	24	29
Other	0	0	0	0

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Survey Question 2d	Miles City	Forsyth	Circle	Cumulative
I participate an average of <u> ? </u> hours per trip	Sample Size = 89	Sample Size = 77	Sample Size = 86	Sample Size = 252
	Average Hours of Participation			
Fishing (Stream)	32	19	26	26
Fishing (Reservoir)	22	17	29	23
Hunting (Bird)	20	13	24	19
Hunting (Big Game)	43	47	49	46
Backpacking (Overnight)	64	20	45	46
Hiking (Day)	9	12	17	12
Car Camping	44	40	60	48
Picnicking	6	6	17	9
Bicycling	6	5	14	8
Horseback Riding	4	8	10	7
Canoe/Rafting (Lake)	15	14	25	18
Sailing	14	0	24	18
River Floating	13	16	27	16
Swimming (Pool)	3	4	6	4
Swimming (Natural Water)	4	5	18	9
Motor Boating	28	28	23	26
Four-Wheel Touring	7	12	26	14
Motorbike Riding	8	5	16	10
Snowmobiling	19	13	21	19
Ice Skating (Natural Ice)	4	6	6	5
Ice Skating (Man-Made)	2	12	8	6
Cross Country Skiing	11	9	20	13
Downhill Skiing	20	43	72	35
Bird Watching	2	4	3	2
Baseball/Softball	4	8	10	8
Tennis	2	2	8	4
Running	1	4	8	4
Golf	4	4	14	6
Others	0	0	0	0

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Question three asked where the respondent was presently employed, to help determine if persons in certain occupations had similar recreation habits. Choices which the respondent had on the survey was, the oil, gas, coal or agricultural industry, or "other." For all survey sites the great majority of respondents (72%) checked "other" and many indicated that they were employed by a service oriented business such as a retail store or restaurant. Forsyth had the greatest proportion of coal industry employees (24%). This is not surprising when the proximity of Colstrip and other mining operations to Forsyth is considered and if one realizes that Circle is physically removed from most energy development.



Survey Results

Survey Question	Miles City	Forsyth	Circle	Cumulative
	Sample Size = 77	Sample Size = 77	Sample Size = 75	Sample Size = 229
3. Are you presently employed in:	Percent of Respondents			
a) Oil Industry	3%	4%	9%	5%
b) Gas Industry	6	1	0	3
c) Coal Industry	0	22	0	7
d) Agriculture	4	11	24	13
e) Other	87	62	67	72



Question four asked if there were "outdoor recreation activities you would like to participate in but cannot?" It was hoped that this question would portray the future need for outdoor recreation facilities in southeastern Montana.

Only 21 responses were received from a sample size of 252 in all three survey sites. This amounts to an 8% response rate, assuming one response per individual. Of course each respondent could make any number of responses. This seems to indicate that southeastern Montana residents do not perceive a great need for an increase in variety of outdoor recreation activities.

It is especially interesting to note that Forsyth, with the greatest proportion of coal industry employees (question 3), expressed the least need for additional facilities. This may be surprising if one pictures the coal industry attracting young men with families. Perhaps, however, the well developed outdoor recreation facilities in Forsyth and Colstrip, as outlined in Chapter V, are going a long way toward satisfying this need.

Although relatively few needs were expressed as a result of question four, the most predominant of these needs were for motorcycle and golf facilities. At least one respondent indicated that the cost of golfing, not the availability of a golf course was his problem. Therefore, motorcycle facilities must take precedence. It is assumed that off road motor bike riding is the activity being referred to by the respondents. The next activities which were mentioned most often were swimming, hiking, and roller skating.



Survey Question	Miles City	Forsyth	Circle	Cumulative Sample Size
	Sample Size = 89	Sample Size = 77	Sample Size = 86	= 252
4. Are there outdoor recreation activities you would like to participate in but cannot? (All responses were due to a lack of adequate facilities)	1-Target Shooting 1-Hiking 1-Camping 1-Swimming 1-X-Country Skiing 1-Boating 1-Motorcycling 1-Golf 1-Roller Skating	 2-Motorcycling 1-Golf 1-Soccer	 1-Skeet Shooting 1-Hiking 1-Swimming 1-Golf 1-Roller Skating 1-Volleyball 1-Bicycling 1-Water Recreation	1 1 2 1 2 1 1 3 3 2 1 1 1 1
Total Responses	9	4	8	21



Question five was an attempt to determine what effect rising gasoline prices might have on recreation for southeastern Montana residents. Only 10% of all respondents indicated that it would have no influence on recreation travel plans. Fifty-two percent of the respondents indicated that they would not alter the length of their recreation trips, but would take fewer of them. Also a large portion of respondents, 48%, indicated that they would travel closer to home. These two responses may appear to represent totally different effects of rising gasoline prices on different recreationists. However, we must remember that the respondents could "check" as many responses as were appropriate. Therefore it is conceivable that these results could indicate that southeastern Montanans will continue to take relatively long vacation trips, but will recreate closer to home on shorter weekend outings.

Either interpretation would indicate that nearly half of the respondents intend to rely more heavily on local outdoor recreation facilities.



Survey Question	Miles City	Forsyth	Circle	Cumulative
	More than one response may be given by each respondent			
5. What will the rising cost of gasoline do to your day-to-day recreational travel plans?	Sample Size = 89	Sample Size = 77	Sample Size = 86	Sample Size = 252
a) No influence	15%	8%	6%	10%
b) Longer stays at destinations	22	23	15	20
c) Travel in larger groups	22	14	15	17
d) Change mode of transportation	12	10	7	10
e) Travel closer to home	43	49	52	48
f) Same length trip, but fewer trips	46	48	62	52
g) Other	0	0	1*	<1

*spend more time camping



Chapter VII

Needs for the Future

In order to satisfy recreation demands during the coming decade recreation managing agencies should maintain the ratio of existing facilities with the population growth which is expected in most of the counties in the study area (Chapter IV). Special attention should be given to the most popular activities (question 2a - see chart) such as picnicking, hunting, fishing, swimming, and bicycling. The importance of these activities is reinforced by question 2b which revealed that the activities in most need of additional facilities are (in descending order) swimming, picnicking, bicycling, fishing and hunting. Question four ranked motorcycling, golfing, swimming, hiking and roller skating as activities that respondents would like to participate in but cannot.

The activity which reoccurs in all three of these rankings is swimming. Emphasis should be placed upon providing adequate swimming pools and natural swimming areas. It was observed that picnicking was a very popular activity as well as being in need of additional facilities. A logical approach might be to provide picnicking areas near water bodies suitable for swimming. Fishing opportunities might also be provided in this sort of approach.

Southeastern Montana has relatively small public land inholdings. This places the burden of hunting and fishing access largely on the private landowner. Question 2a of the survey (Chapter VI) reveals that hunting and fishing are among the most popular outdoor recreation activities in the region and in need of some additional facilities according to question 2b. By 1990 the region's population is projected to increase by 8.6% (Chapter IV). An effective method must be found to provide additional public hunting and fishing access and relieve the landowner of this increasing burden.



Motorcycling, bicycling, hiking and roller skating were emphasized in question 2b and question 4 as needing additional facilities or being unavailable. The Bureau of Land Management might be best suited to address motorcycling and hiking needs because it is one of the largest public land holders in the region. Bicycle paths and outdoor roller skating facilities might best be addressed by local governments, with possible financial assistance from the state and its participation in the Land and Water Conservation Act of 1965.

With the above facility needs in mind, land managing and recreation managing agencies should be better able to take advantage of opportunities, as they arise, to meet future recreation needs.



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